

REMARKS

Applicants submit an Excess Claim Fee Payment Letter for one (1) excess independent claim.

Claims 1-4, 6-8, 22-24 and 27-33 are all of the claims pending in the application. Claim 1 has been amended to more particularly define the invention. Claims 32-33 have been added to claim additional features of the invention and to provide more varied protection of the claimed invention. Claim 5 has been canceled without prejudice or disclaimer.

Applicants respectfully acknowledge the Examiner's indication that claims 3 and 4 would be allowable if rewritten in independent form and that claims 24 and 27-31 are allowed. Applicants submit, however, that all of claims 1-4, 6-8, 22-24 and 27-33 are allowable over the cited prior art references.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicants specifically state that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claims 1, 2 and 5-8 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Japanese Patent Document JP 10-154462 (hereinafter "JP '462"). Claims 22 and 23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over JP '462.

These rejections are respectfully traversed in the following discussion.

I. THE CLAIMED INVENTION

The claimed invention (e.g., defined by claim 1) is directed to a secondary battery. The secondary battery includes a positive electrode, a negative electrode, and an electrolyte disposed between the positive electrode and the negative electrode. The active material of one of the positive electrode and the negative electrode includes a compound having boron radicals. The compound has a spin concentration of higher than 10^{21} spins/g.

The claimed invention of exemplary claim 1, provides a secondary battery wherein the active material compound has a spin concentration of higher than 10^{21} spins/g. (see e.g.,

Application at page 4, line 25). This combination of features provides a highly-stable battery having a high energy density (see Application at page 2, lines 31-32).

II. THE PRIOR ART REFERENCE

The Examiner alleges that JP '462 teaches the claimed invention of claims 1, 2 and 5-8. The Examiner further alleges that the claimed invention of claims 22 and 23 would have been obvious in view of JP '462. Applicants submit, however, that there are elements of the claimed invention which are neither taught nor suggested by JP '462.

That is, JP '462 does not teach or suggest a secondary battery "*wherein said compound has a spin concentration of higher than 10²¹ spins/g*", as recited by claim 1.

The Examiner attempts to rely on the entire disclosure of JP '462 to support his allegations. The Examiner, however, is clearly incorrect.

That is, nowhere in these passages (nor anywhere else for that matter) does JP '462 teach or suggest a secondary battery wherein the active material compound has a spin concentration of higher than 10²¹ spins/g. Indeed, the Examiner does not even allege that JP '462 teaches or suggests this feature.

That is, the Examiner merely alleges that "the compound would inherently have a spin concentration of 10²¹ spins/g" (see Office Action at page 3, numbered paragraph 4). However, JP '462 fails to recognize the significance of this parameter.

In contrast, Applicants have discovered the spin concentration of the compound in the active material. As pointed out in the Application, it is desired to provide a highly-stable secondary battery (see Application at page 2, lines 31-32). Furthermore, Applicants recognize that stable radicals have a spin concentration of higher than 10²¹ spins/g (see Application at page 4, line 25). Applicants submit that the claimed range recited in claim 1 is an important contribution to the art for achieving the desired results of the claimed invention.

Applicants point out that MPEP 2144.05 states that "[t]he law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims". That is, a specific range or other variable in a claim may provide patentable weight to a claim if the applicant can show that the particular range is important

(see MPEP 2144.05). In order to anticipate this claimed range, the specific limitation must be disclosed in the reference with “sufficient specificity to constitute an anticipation under the statute” (see MPEP 2131.03). As stated above, JP ‘462 does not even mention a spin concentration of the active material compound, let alone teach or suggest the specific ratio recited in claim 1. That is, JP ‘462 fails to recognize the significance of this parameter.

Therefore, the specific range recited in exemplary claim 1 clearly shows a technical effect and is not arbitrarily selected to solve the problems presented in the Application.

Applicants submit that it is erroneous for the Examiner to merely disregard this feature of the claimed invention as merely “inherent”.

Furthermore, Applicants submit that the MPEP provides that “[a] particular parameter must first be recognized as a result-effective variable, i.e., **a variable which achieves a recognized result**, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation” (MPEP at 2144.05) (emphasis added). JP ‘462 does not suggest any result as being affected by the spin concentration of the active material compound, let alone teach or suggest optimizing the spin concentration for providing the desired results of the claimed invention.

That is, nowhere does JP ‘462 teach or suggest that spin concentration has any effect on the stability of the radicals or the secondary battery. Therefore, it is clearly unreasonable to suggest that JP ‘462 teaches or suggests that the spin concentration of the active material compound is merely a result-effective variable.

Therefore, Applicants submit that JP ‘462 does not teach or suggest the elements of the claimed invention. Therefore, the Examiner is respectfully requested to withdraw these rejections.

III. NEW CLAIMS

New claims 32-33 added to provide more varied protection for the present invention and to claim additional features of the invention. These claim are independently patentable because of the novel features recited therein.

Applicants respectfully submit that new claims 32-33 are patentable over any

combination of the applied references at least for analogous reasons to those set forth above with respect to claims 1-4, 6-8, 22-24 and 27-31.

IV. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicants submit that claims 1-4, 6-8, 22-24 and 27-33, all of the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,



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